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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/749,203	12/27/2000	Derek Augustus Samuel Ruths	H053854.0001US0	5298

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EXAMINER

KANG, INSUN

ART UNIT	PAPER NUMBER
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2193

DATE MAILED: 03/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/749,203

Applicant(s)

RUTHS ET AL.

Examiner

Insun Kang

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-52 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-52 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is in response to the RCE amendment filed 12/13/2005.
2. As per applicant's request, claims 1, 8-15, 19, 27, 32, 36, 37, 39-41, and 45 have been amended. Claims 1-52 are pending in the application.

Information Disclosure Statement

3. Pages 25-26 are missing in the reference "NetZ technical Overview" submitted on 5/24/2001. Applicant is respectfully requested to submit the missing pages.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claims 11-18 and 46-52 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 1-18 are non-statutory because they are directed to a "storage medium" without recitation of a computer or a computer-readable medium embodying the code. The claims merely recite a "storage medium" that can be a simple file containing code that is disembodied arrangement so as to be called a "computer program" or compilation of facts, information, or data *per se*, without creating any functional interrelationship, either as part of the stored data or as part of the computing processes performed by the computer ("acts") or computer readable medium so as to enable the computer to perform the claimed software code as recited. Thus the claims represent non-functional descriptive material that is not capable of producing a useful result, and

hence represent only abstract ideas. Therefore, the claims are non-statutory.

Claims 46-52 are non-statutory because they are directed to a "software architecture" without recitation of a computer or a computer-readable medium embodying the code. The claims merely recite a "software architecture" that is disembodied arrangement so as to be called a "computer program" or compilation of facts, information, or data *per se*, without creating any functional interrelationship, either as part of the stored data or as part of the computing processes performed by the computer ("acts") or computer readable medium so as to enable the computer to perform the claimed software code as recited. Thus the claims represent non-functional descriptive material that is not capable of producing a useful result, and hence represent only abstract ideas. Therefore, the claims are non-statutory.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Proksim's NetZ ("NetZ technical overview," 5/2000) hereafter NetZ in view of Bic ("Distributed Computing using Autonomous Objects," IEEE, 1995).

Per claim 1:

NetZ discloses:

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code to create a shared environment (i.e. "using NetZ, every game object is automatically replicated to all other stations giving each participant a global view of the game world," page 6)

- an object-oriented programming environment distributed across multiple computer systems and a plurality of objects (i.e. "using NetZ, every game object is automatically replicated to all other stations giving each participant a global view of the game world," page 6)
- code to create an object (i.e. "A duplicated object is an instance of a DOClass," page 7)
- a set of behavior logics; each member of the set of behavior logics operable to cause the object to perform a task (i.e. page 12)
- a receiver logic, operable to receive a Command from another object in the shared environment; the receiver logic is externally invokable (i.e. page 22 Actions section).

NetZ does not explicitly teach mapping logic able to map a command received at the receiver logic, on the basis of a characteristic of the command, to a selected behavior logic for execution of the selected behavior logic, wherein the mapping logic is within the object and wherein the existence of the mapping logic within the object allows the object to function as an autonomous unit such that the object can be moved within the computer systems of the shared environment and function independently of its location in the shared environment without the necessity of defining relationships between the object and other objects of the shared environment. However, Bic teaches autonomous

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objects in the distributed computing was known in the pertinent art, at the time applicant's invention was made, to "carry their own behavior and to propagate autonomously through the underlying computational network (page 160, abstract)" such as those disclosed in Bic. It would have been obvious for one having ordinary skill in the art to modify NetZ's disclosed system to incorporate the teachings of Bic. The modification would be obvious because one having ordinary skill in the art would be motivated to provide self contained intelligent objects for autonomy in the distributed system as suggested by Bic (page 160, Autonomous Objects).

Per claim 2:

The rejection of claim 1 is incorporated, and further, Bic teaches:
the set of Behavior logics and the mapping logic are private to the object (page 160, Autonomous Objects).

Per claim 3:

The rejection of claim 1 is incorporated, and further, NetZ teaches:

- the set of Behavior logics has no members (i.e. page 5 Descriptive approach section)

Per claim 4:

The rejection of claim 1 is incorporated, and further, NetZ teaches:

- a default Behavior logic, operable to cause the object to perform a default task, the default Behavior logic private to the object and the default behavior logic is executed if the received command is not mapped to another behavior logic (i.e. page 5 Descriptive approach section)

Per claim 5:

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The rejection of claim 1 is incorporated, and further, NetZ teaches that a command can be mapped to multiple Behavior logics (i.e. page 5 Descriptive approach section)

Per claim 6:

The rejection of claim 1 is incorporated, and further, NetZ teaches:

an authentication data, the authentication data providable to other objects for authenticating Commands received from the other objects by the code to receive the Command (i.e. page 5 Descriptive approach section).

Per claim 7:

The rejection of claim 6 is incorporated, and further, NetZ teaches:

the authentication data wherein the mapping of a command to a behavior logic may be restricted in response to the authentication data(i.e. page 5 Descriptive approach section)

Per claim 8:

The rejection of claim 1 is incorporated, and further, NetZ teaches:

- code to create a first Shadow of the object ,the first Shadow of the object operable to communicate with the object ; the first Shadow of the object being informed of changes to the object and the object being informed of changes to the first Shadow of the object (i.e. page 7 Duplicated Objects section) as claimed.

Per claim 9:

The rejection of claim 8 is incorporated, and further, NetZ teaches:

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- the first Shadow of the object is a copy of the object(i.e. page 7 Duplicated Objects section) as claimed.

Per claim 10:

- The rejection of claim 8 is incorporated, and further, NetZ teaches that the mapping of commands to behavior logics of the first Shadow of the object differs from the mapping of commands to behavior logics of the object (i.e. page 7 Duplicated Objects section) as claimed.

Per claim 11:

The rejection of claim 8 is incorporated, and further, NetZ teaches:

- code to create a plurality of Shadows of the object operable to communicate with the object and the first Shadow of the object ; the object and the first Shadow of the object being informed of changes to any of the plurality of Shadows of the object and each of the plurality of Shadows of the object being informed of changes to the object and changes to the first Shadow of the object (i.e. page 7 Duplicated Objects section) as claimed.

Per claim 12:

The rejection of claim 8 is incorporated, and further, NetZ teaches:

- code to promote the first Shadow of the object into a new object (i.e. page 7 Duplicated Objects section) as claimed.

Per claim 13:

The rejection of claim 12 is incorporated, and further, NetZ teaches:

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- code to create a plurality of Shadows of the object wherein executing the code to promote the first Shadow of the object into a new object converts each of the plurality of Shadows of the object into a Shadow of the new object (i.e. page 7 Duplicated Objects section) as claimed.

Per claim 14:

The rejection of claim 12 is incorporated, and further, NetZ teaches:

a plurality of computer systems, the object on a computer systems of the plurality of computer systems, the first Shadow of the object on a second computer systems of the plurality of computer systems and code to manage the plurality of computer systems, executing the code to promote the first Shadow of the object to a new object if the first computer systems experiences a predetermined condition (i.e. page 7 Duplicated Objects section) as claimed.

Per claim 15:

The rejection of claim 1 is incorporated, and further, NetZ teaches:

- code to modify the mapping logic to modify the mapping of commands to behavior logics (i.e. page 5 Descriptive approach section)

Per claim 16:

The rejection of claim 1 is incorporated, and further, NetZ teaches:

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- a plurality of computer systems, the object having a location on one of the plurality of computer systems, the object acts independently of its location (i.e. page 5 Descriptive approach section)

Per claim 17:

The rejection of claim 1 is incorporated, and further, NetZ teaches code to configure the mapping logic from an external data source (i.e. page 5 Descriptive approach section)

Per claim 18:

The rejection of claim 1 is incorporated, and further, Bic teaches the software is capable of using any networking protocol (page 160, Autonomous Objects).

Per claim 36:

NetZ discloses:

- -defining within an object-oriented programming environment a plurality of objects(i.e. "using NetZ, every game object is automatically replicated to all other stations giving each participant a global view of the game world," page 6)
- each object of the plurality of objects operable to receive and execute Commands;
 - each object exposed to each other object of the plurality of objects (i.e. "using NetZ, every game object is automatically replicated to all other stations giving each participant a global view of the game world," page 6)

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- -creating a set of Behavior logics for an object (i.e. "using NetZ, every game object is automatically replicated to all other stations giving each participant a global view of the game world," page 6)

NetZ does not explicitly teach mapping members wherein the mapping function of an object is included within the object and wherein the existence of the mapping logic within the object allows the object to function as an autonomous unit such that the object can be moved within the computer systems of the shared environment and function independently of its location in the shared environment without the necessity of defining relationships between the object and other objects of the shared environment. However, Bic teaches autonomous objects in the distributed computing was known in the pertinent art, at the time applicant's invention was made, to "carry their own behavior and to propagate autonomously through the underlying computational network (page 160, abstract)" such as those disclosed in Bic. It would have been obvious for one having ordinary skill in the art to modify NetZ's disclosed system to incorporate the teachings of Bic. The modification would be obvious because one having ordinary skill in the art would be motivated to provide self contained intelligent objects for autonomy in the distributed system as suggested by Bic (page 160, Autonomous Objects).

Bic further discloses mapping any Command not a member of the first set of Commands to a default Behavior logic (page 160, Autonomous Objects); configuring a receiver logic to receive a Command and initiate the execution of a Behavior logic corresponding to the Command in response to the mapping of the command to the behavior logic (page 160, Autonomous Objects).

Per claim 37:

The rejection of claim 36 is incorporated, and further, NetZ teaches

- creating a Shadow of an object of the plurality of objects, the Shadow configured such that sending a Command to the Shadow causes the object to act as if the Command had been sent to the object (i.e. page 7 Duplicated Objects section) as claimed.

Per claim 38:

The rejection of claim 37 is incorporated, and further, NetZ teaches

- each of the plurality of objects having a location on one of a plurality of computer systems, each of the plurality of objects being independent of the location of each other of the plurality of objects (i.e. page 7 Duplicated Objects section) as claimed.

Per claim 39:

The rejection of claim 38 is incorporated, and further, NetZ teaches

- a Shadow of each of the plurality of objects automatically created on each of the plurality of servers other than the server on which the object is located (i.e. page 7 Duplicated Objects section) as claimed.

Per claims 19-35, they are the method versions of claims 1-18 and 36, respectively, and are rejected for the same reasons set forth in connection with the rejection of claims 1-19 and 36 above.

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Per claims 40-42, they are the processor-based system versions of claims 4 and 5, respectively, and are rejected for the same reasons set forth in connection with the rejection of claims 4 and 5 above.

Per claim 43:

The rejection of claim 40 is incorporated, and further, NetZ teaches

- an input device coupled to the first processor, wherein a first object of the plurality of objects is coupled to the input device such that manipulation of the input device sends a Command from the first object to a second object of the plurality of objects without identifying the input device, the second object of the plurality of objects acting responsive to the Command independent of the nature of the input device (i.e. page 7 Duplicated Objects section) as claimed.

Per claim 44:

The rejection of claim 40 is incorporated, and further, NetZ teaches

- an output device coupled to the first processor, wherein a first object of the plurality of objects is coupled to the input device such that a first object is capable of rendering a second object on the output device without identifying the output device to the second object(i.e. page 7 Duplicated Objects section) as claimed.

Per claim 45:

The rejection of claim 40 is incorporated, and further, NetZ teaches

-a second processor; a network, coupled to the first processor and the second processor; a second storage device coupled to the second processor, the second storage device containing the software; the software further comprising: code to connect

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the shared environment to the network; code to create a Shadow on the second processor of the object on the first processor, the Shadow and the object communicating with each other to inform the Shadow of changes to the object and the object of changes to the Shadow(i.e. page 7 Duplicated Objects section) as claimed.

Per claim 46:

NetZ teaches:

-a distributed system; a plurality of shared environments ,each of the plurality of shared environments comprising an object-oriented programming environment distributed across ...a plurality of objects executing on a different computer of the plurality of computers(i.e. "using NetZ, every game object is automatically replicated to all other stations giving each participant a global view of the game world," page 6)

a CommandReceiver class; a set of Behavior private methods, each member of the set of Behavior methods adapted to cause instantiations of the CommandReceiver class to perform a task (i.e. page 12); an executeCommand public method operable to receive a Command from an object in the shared environment; code to receive the Command(i.e. page 12).

NetZ does not explicitly teach code to select a Behavior private method of the set of Behavior private methods selected corresponding to a characteristic of the Command from a Command-Behavior mapping. However, Bic teaches autonomous objects in the distributed computing was known in the pertinent art, at the time applicant's invention was made, to "carry their own behavior and to propagate autonomously through the

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underlying computational network (page 160, abstract)" such as those disclosed in Bic.

It would have been obvious for one having ordinary skill in the art to modify NetZ's disclosed system to incorporate the teachings of Bic. The modification would be obvious because one having ordinary skill in the art would be motivated to provide self contained intelligent objects for autonomy in the distributed system as suggested by Bic (page 160, Autonomous Objects). NetZ further discloses code to execute the selected Behavior private method; and a Kernel subclass of the CommandReceiver class, the Kernel class comprising: code to instantiate objects of the CommandReceiver class; code to destroy objects of the CommandReceiver class (i.e. page 5 Descriptive approach section).

Per claim 47:

The rejection of claim 46 is incorporated, and further, NetZ teaches

- a Pawn subclass of the CommandReceiver class, the Pawn subclass comprising: code to register an instantiation of a Pawn with a Kernel object of the Kernel subclass; code to determine whether an instantiation of the Pawn subclass is a real Pawn or a Shadow Pawn of a real Pawn, and code to send State information about an instantiation of the Pawn subclass, wherein Commands received by Shadow Pawns are sent to the real Pawn corresponding to the Shadow Pawn (i.e. page 7 Duplicated Objects section) as claimed.

Per claim 48:

The rejection of claim 46 is incorporated, and further, NetZ teaches

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- a ControlDevice subclass of the CommandReceiver class corresponding to an input device for receiving input from the input device and sending Commands to other CommandReceiver objects(i.e. page 7 Duplicated Objects section) as claimed.

Per claim 49:

The rejection of claim 46 is incorporated, and further, NetZ teaches
a Construct subclass of the CommandReceiver class corresponding to an output device for rendering objects of the CommandReceiver class with graphical attributes (i.e. page 7 Duplicated Objects section) as claimed.

Per claim 50:

The rejection of claim 46 is incorporated, and further, NetZ teaches
- a Console subclass of the CommandReceiver class for allowing a user of the distributed system to instantiate, modify, and destroy objects, and for allowing a user to send Commands to CommandReceiver objects (i.e. page 7 Duplicated Objects section) as claimed.

Per claim 51:

The rejection of claim 46 is incorporated, and further, NetZ teaches
-a Nengine subclass of the CommandReceiver class for serializing and deserializing CommandReceiver objects, transmitting and receiving the serialized CommandReceiver object across a network to a Nengine in another shared environment of the distributed system(i.e. page 7 Duplicated Objects section) as claimed.

Per claim 52:

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The rejection of claim 51 is incorporated, and further, NetZ teaches

-a Node subclass of the CommandReceiver class, an instantiation of the Node subclass corresponding to a Pawn object for representing the Pawn object to a Nengine object for communicating State information corresponding to a Pawn to Shadow Pawns of the Pawn and for communicating Commands sent to a Shadow Pawn to the real Pawn corresponding to the Shadow Pawn(i.e. page 7 Duplicated Objects section) as claimed.

Response to Arguments

8. Applicant's arguments with respect to claims 1-52 have been considered but are moot in view of the new ground(s) of rejection.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Insun Kang whose telephone number is 571-272-3724. The examiner can normally be reached on M-F 7:30-4 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on 571-272-3719. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100.

I. Kang
Patent Examiner
AU2193



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